

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-45 (Canceled).

46. (Currently Amended) A method for reducing or eliminating the susceptibility of a tropoelastin to proteolysis comprising mutating a sub-sequence in an amino acid sequence of the tropoelastin which is susceptible to cleavage by one or more proteases selected from the group consisting of a serine protease and a metalloproteinase, so that the mutated amino acid sequence is not cleaved by the protease so that the susceptibility of the tropoelastin to proteolysis is reduced or eliminated.

47 (Currently Amended) A method according to claim 46, wherein: one sub-sequence is mutated.

(a) susceptibility of the tropoelastin to serine protease is reduced by mutating one or more amino acid sequences of the tropoelastin selected from the group consisting of RAAAG (amino acid 1 to 5 of SEQ ID NO:9), the amino acid sequences shown in SEQ ID NO: 8 to 12, and the amino acid sequences shown in SEQ ID NO: 17 to 44; or
(b) susceptibility of the tropoelastin to metalloproteinase is reduced by mutating one or more amino acid sequences of the tropoelastin selected from the group consisting of ALAAA (amino acid 1 to 5 of SEQ ID NO:13), the amino acid sequences shown in SEQ ID NO: 13, and the amino acid sequences shown in SEQ ID NO: 45 to 70.

48. (Currently Amended) A method according to claim 46 wherein one amino acid residue in the amino acid sub-sequence is mutated.

49. (Currently Amended) A method according to claim 469 wherein the protease is sub-sequence is capable of being digested by a serine protease.

50. (Currently Amended) A method according to claim 50 47 wherein the amino acid sub-sequence has an amino acid sequence including the sequence: RAAAG, amino acid aa 1 to 5 of SEQ ID NO:9, is mutated by replacing arginine with alanine,.

51. (Currently Amended) A method according to claim 50 47 wherein the amino acid sequence selected from the group of sequences shown in sub-sequence is mutated by replacing arginine in the sequence: RAAAG, aa 1 to 5 of SEQ ID NOS: 9, 17 to 44, is mutated by replacing arginine with alanine.

52. (Currently Amended) A method according to claim 469 wherein the serine protease is plasmin sub-sequence has an amino acid sequence selected from the group of sequences shown in SEQ ID NOS: 17 to 44.

53. (Currently Amended) A method according to claim 52 47 wherein the sub-sequence is mutated by replacing arginine in the amino acid sequence selected from the group of sequences shown in SEQ ID NOS: 17 to 44 is mutated by replacing arginine with alanine.

54. (Currently Amended) A method according to claim 49 46 wherein the sub-sequence is capable of being digested by serine protease is thrombin and has an amino acid sequence shown in SEQ ID NOS: 8 or 9.

55. (Currently Amended) A method according to claim 49 52 wherein the sub-sequence is capable of being digested by plasmin and has an amino acid sequence is selected from the group consisting of shown in SEQ ID NOS: 11 and or 12.

56. (Currently Amended) A method according to claim 49 57 wherein the amino acid sequence is selected from the group consisting of SEQ ID NO: 8 and 9~~sub-sequence is capable of being digested by kallikrein.~~

57. (Currently Amended) A method according to claim 546 wherein the protease is kallikrein~~sub-sequence has an amino acid sequence shown in SEQ ID NOS: 9 or 10.~~

58. (Currently Amended) A method according to claim 46 wherein the sequence is capable of being digested by protease is a metalloproteinase.

Claim 59. Cancelled.

60. (Currently Amended) A method according to claim 59 47 wherein the sub-amino acid sequence is mutated by replacing alanine at any position in the sequence: ALAAA, aa 1 to 5 of SEQ ID NO:13, is mutated by replacing the alanine at any position in the sequence with another amino acid residue.

61. (Currently Amended) A method according to claim 47 60 wherein the sub-amino acid sequence is mutated by replacing the alanine which is N-terminal to leucine in the sequence: ALAAA, aa 1 to 5 of SEQ ID NO:13, is mutated by replacing the alanine which is N-terminal to leucine with another amino acid.

Claim 62. Cancelled.

63. (Currently Amended) A method according to claim 61 47 wherein the sub-amino acid sequence is mutated by replacing alanine at any position in the sequence selected

from the group of sequences shown in SEQ ID NOS: 45 to 70 is mutated by replacing alanine at any position in the sequence with another amino acid residue.

64. (Currently Amended) A method according to claim 63 wherein the alanine that is replaced is N-terminal to leucine.

65. (Currently Amended) A method according to claim 58 wherein the sub-sequence is capable of being digested by metalloproteinase is gelatinase A or B.

66. (Currently Amended) A method according to claim 65 wherein the sub-amino acid sequence has an amino acid sequence shown in SEQ ID NO: 13.

67. (Currently Amended) A method according to any one of claims 46 to 58, 60, 61 or 63-65 66 wherein the tropoelastin is human tropoelastin.

68. (Withdrawn) A method for enhancing the susceptibility of a tropoelastin to proteolysis comprising inserting a sub-sequence into the tropoelastin so that the susceptibility of the tropoelastin to proteolysis is enhanced.

69. (Withdrawn) A method according to claim 68 wherein one sub-sequence is inserted.

70. (Withdrawn) A method according to claim 68 wherein the inserted sub-sequence is capable of being digested with a serine protease.

71. (Withdrawn) A method according to claim 70 wherein the inserted sub-sequence has an amino acid sequence including the sequence: RAAAG, amino acids 1 to 5 of SEQ ID NO:9.

72. (Withdrawn) A method according to claim 70 wherein the inserted subsequence has an amino acid sequence selected from the group of sequences shown in SEQ ID NOS: 17 to 44.

73. (Withdrawn) A method according to claim 70 wherein the inserted subsequence is capable of being digested by thrombin and has an amino acid sequence shown in SEQ ID NOS: 8 or 9.

74. (Withdrawn) A method according to claim 70 wherein the inserted subsequence is capable of being digested by plasmin and has an amino acid sequence shown in SEQ ID NOS: 11 or 12.

75. (Withdrawn) A method according to claim 70 wherein the inserted subsequence is capable of being digested by kallikrein.

76. (Withdrawn) A method according to claim 75 wherein the inserted subsequence has an amino acid sequence shown in SEQ ID NOS: 9 or 10.

77. (Withdrawn) A method according to claim 68 wherein the inserted subsequence is capable of being digested by a metalloproteinase.

78. (Withdrawn). A method according to claim 76 wherein the inserted subsequence has an amino acid sequence including the sequence: ALAAA, amino acid 1 to 5 of SEQ ID NO:13.

79. (Withdrawn) A method according to claim 77 wherein the inserted subsequence has an amino acid sequence selected from the group of sequences shown in SEQ ID NOS: 45 to 70.

80. (Withdrawn) A method according to claim 77 wherein the inserted subsequence is capable of being digested by gelatinase A or B.

81. (Withdrawn) A method according to claim 80 wherein the inserted subsequence has the amino acid sequence shown in SEQ ID NO: 13.

82. (Withdrawn) A method according to any one of claims 68 to 81 wherein the tropoelastin is human tropoelastin.

83. (Withdrawn) A peptidomimetic molecule comprising all or part of a peptide selected from the group consisting of KAPGVGGAF, SEQ ID NO:9; RAAAGLG, SEQ ID NO:9; RSLSPELREGD, SEQ ID NO:10; KAAQFGLVPGV, SEQ ID NO:14; KSAAKVAAKAQLRAA, 503 to 517 of SEQ ID NO:4; RSLSPELRE, 1 to 9 of SEQ ID NO:10; LAAA KAAKYGAA, 2 to 13 of SEQ ID NO:13.

84. (Withdrawn) A peptidomimetic molecule which has the sequence: H-Ala-Ala-Lys-Ala-Gln-Leu-Arg-Ala-Ala-Ala-Gly-Leu-Gly-Ala-OH, 509 to 522 of SEQ ID NO:4, or H-Ala-Ala-Lys-Ala-Gln-Leu-Arg-R-Ala-Ala-Gly-Leu-Gly-Ala-OH, 509 to 522 of SEQ ID NO:4, (where R = a reduced peptide bond).

85. (Withdrawn) A peptidomimetic molecule which is a retro-inverso pseudo peptide which has the sequence: H-D-Ala-Gly-D-Leu-Gly-D-Ala-D-Ala-(R)-D-Arg-D-Leu-D-Gln-D-Ala-D-Lys-D-Ala-D-Ala-OH , SEQ ID NO:84, (where R = a reduced peptide bond) or H-D-Ala-Gly-D-Leu-Gly-D-Ala-D-Ala-D-Arg-D-Leu-D-Gln-D-Ala-D-Lys-D-Ala-D-Ala-OH, SEQ ID NO: 85.

86. (Withdrawn) A peptidomimetic molecule which has the sequence H-Val-Pro-Gly-Ala-Leu-Ala-Ala-Ala-OH , 557 to 564 of SEQ ID NO:5, or H-Val-Pro-Gly-Ala-(R)-Leu-Ala-Ala-Ala-OH (where R = a reduced peptide bond), SEQ ID NO 86.

87. (Withdrawn) A peptidomimetic molecule which is a retro-inverso pseudo peptide which has the sequence: H-D-Ala-D-Ala-D-Ala-D-Leu-(R)-D-Ala-Gly-D-Pro-D-Val-OH (where R = a reduced peptide bond), SEQ ID NO:87 or H-D-Ala-D-Ala-D-Ala-D-Leu-D-Ala-Gly-D-Pro-D-Val-OH, SEQ ID NO:88.

88. (Withdrawn) A method for enhancing the purification of a tropoelastin comprising including a peptidomimetic molecule according to any one of claims 82 to 86 in a crude tropoelastin preparation which is being subjected to purification.

89. (Withdrawn) A pharmaceutical composition comprising a peptidomimetic molecule according to any one of claims 82 to 86 and a pharmaceutically acceptable carrier.